Notice of Allowability	Application No.	Applicant(s)	
	09/942,891	GRUYS ET AL.	
	Examiner	Art Unit	
	David H Kruse	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the Amendment filed 17 September 2004*.

2. ☒ The allowed claim(s) is/are *42-46*.

3. ☒ The drawings filed on *30 August 2001* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *Same* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ron Laby on 7 October 2004.

The application has been amended as follows:

The Title of the Invention has been changed to -- A NUCLEIC ACID ENCODING A MODIFIED THREONINE DEAMINASE AND METHODS OF USE --.

42. (Amended) An isolated or recombinant nucleic acid comprising a sequence encoding a threonine deaminase protein capable of catalyzing the conversion of threonine to α-ketobutyrate, wherein:

a. the sequence encoding a leucine residue [at] corresponding to amino acid position 447 [relative to said position] in the protein encoded by SEQ ID NO:1 is replaced with a sequence encoding an alanine, isoleucine, valine, phenylalanine, tryptophan, or methionine residue;

b. the sequence encoding a leucine residue [at] corresponding to amino acid position 481 [relative to said position] in the protein encoded by SEQ ID NO:1 is replaced with a sequence encoding an alanine, isoleucine, proline, phenylalanine, tryptophan, or methionine residue; or

c. the sequences encoding leucine residues [at] corresponding to amino acid positions 447 and 481 [relative to said positions] in the protein encoded by SEQ ID NO:1 are independently replaced with sequences encoding alanine, isoleucine, phenylalanine, tryptophan, or methionine residues.

43. (Amended) A recombinant vector comprising a nucleic acid sequence encoding a threonine deaminase protein capable of catalyzing the conversion of threonine to α-ketobutyrate, wherein:

a. the sequence encoding a leucine residue [at] corresponding to amino acid position 447 [relative to said position] in the protein encoded by SEQ ID NO:1 is replaced with a sequence encoding an alanine, isoleucine, valine, phenylalanine, tryptophan, or methionine residue;

b. the sequence encoding a leucine residue [at] corresponding to amino acid position 481 [relative to said position] in the protein encoded by SEQ ID NO:1 is replaced with a sequence encoding an alanine, isoleucine, proline, phenylalanine, tryptophan, or methionine residue; or

c. the sequences encoding leucine residues [at] corresponding to amino acid positions 447 and 481 [relative to said positions] in the protein encoded by SEQ ID NO:1 are independently replaced with sequences encoding alanine, isoleucine, phenylalanine, tryptophan, or methionine residues.

44. (Amended) A recombinant host cell comprising a recombinant nucleic acid sequence encoding a threonine deaminase protein capable of catalyzing the conversion of threonine to α-ketobutyrate, wherein:

a. the sequence encoding a leucine residue [at] corresponding to amino acid position 447 [relative to said position] in the protein encoded by SEQ ID NO:1 is replaced with a sequence encoding an alanine, isoleucine, valine, phenylalanine, tryptophan, or methionine residue;

b. the sequence encoding a leucine residue [at] corresponding to amino acid position 481 [relative to said position] in the protein encoded by SEQ ID NO:1 is replaced with a sequence encoding an alanine, isoleucine, proline, phenylalanine, tryptophan, or methionine residue; or

c. the sequences encoding leucine residues [at] corresponding to amino acid positions 447 and 481 [relative to said positions] in the protein encoded by SEQ ID NO:1 are independently replaced with sequences encoding alanine, isoleucine, phenylalanine, tryptophan, or methionine residues.

45. (Amended) A method of preparing recombinant host cells useful to convert threonine to a-ketobutyrate, the method comprising:

a. selecting a host cell;

b. transforming the selected host cell with a recombinant vector, wherein the recombinant vector comprises a nucleic acid sequence encoding a threonine deaminase protein capable of catalyzing the conversion of threonine to α-ketobutyrate, wherein:

the sequence encoding a leucine residue [at] corresponding to amino acid position 447 [relative to said position] in the protein encoded by SEQ ID NO:1 is replaced with a sequence encoding an alanine, isoleucine, valine, phenylalanine,

tryptophan, or methionine residue; the sequence encoding a leucine residue [at] corresponding to amino acid position 481 [relative to said position] in the protein encoded by SEQ ID NO:1 is replaced with a sequence encoding an alanine, isoleucine, proline, phenylalanine, tryptophan, or methionine residue; or the sequences encoding leucine residues [at] corresponding to amino acid positions 447 and 481 [relative to said positions] in the protein encoded by SEQ ID NO:1 are independently replaced with sequences encoding alanine, isoleucine, phenylalanine, tryptophan, or methionine residues; and

c. obtaining recombinant host cells.

46. (Amended) A transgenic plant, the genome of which comprises a recombinant nucleic acid sequence encoding a threonine deaminase protein capable of catalyzing the conversion of threonine to α-ketobutyrate, wherein:

a. the encoded leucine residue [at] corresponding to amino acid position 447 [relative to said position] in the protein encoded by SEQ ID NO:1 is replaced with alanine, isoleucine, valine, phenylalanine, tryptophan, or methionine;

b. the encoded leucine residue [at] corresponding to amino acid position 481 [relative to said position] in the protein encoded by SEQ ID NO:1 is replaced with alanine, isoleucine, proline, phenylalanine, tryptophan, or methionine; or

c. the encoded leucine residues [at] corresponding to amino acid positions 447 and 481 [relative to said positions] in the protein encoded by SEQ ID NO:1 are independently replaced with alanine, isoleucine, phenylalanine, tryptophan, or methionine.

2. The Examiner acknowledges Applicant's filing of a corrected Oath or Declaration on 17 September 2004, and amendment to the first line of the specification to correct the claim of priority.

3. The following is an examiner's statement of reasons for allowance: The amendments to the claims are supported in the specification on page 145, lines 28-29.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. In an Examiner initiated interview with Applicant's attorney Ron Laby on 7 October 2004, Mr. Laby approved the amendments to the claims to put the application in condition for allowance.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David H. Kruse, Ph.D. whose telephone number is (571) 272-0799. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Amy Nelson can be reached at (571) 272-0804. The fax telephone number for this Group is (703) 872-9306 Before Final or (703) 872-9307 After Final.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (571) 272-0547.

DAVID H. KRUSE, PH.D
PATENT EXAMINER

David H. Kruse, Ph.D.
7 October 2004

6. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.